

theirview

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# Road map for electric vehicles in India

Moving forward on the path to electrifying mobility is a complex issue and requires all stakeholders to work together

S ometime last year, the Union government suddenly announced that India would make the paradigm shift to full electric mobility by 2030. This was more a statement of intent signaling a necessary and transformative shift to ease polluting vehicular emissions on our congested roads. NITI Aayog has since suggested that 40% of personal vehicles and public transportation in the country should go completely electric by 2030. This seems a more realistic target.

There have been extensive discussions over the last few months on the way forward to increase the use of electric vehicles (EVs). A new policy announcement has been rightly shelved; Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles (FAME) II appears to have been postponed to September, and Energy Efficiency Services Ltd has also deferred its purchase of 10,000 EVs. These developments essentially underline the difficulties of proceeding on an uncharted path.

In our enthusiasm to adopt electric mobility, we should not rush into a flawed policy and implementation framework. Sober analysis and a step-by-step approach are required even as the ecosystem for electric vehicles develops gradually, alternative models are pursued, and learnings from experience accrue. Issues today relate to public vs private transportation; battery charging vs swapping models; nature and quantity of incentives; and development of storage technologies.

Our initial focus must be unquestionably on public transportation—bus, taxi and auto fleets. Public transport in India is expected to double by 2030. It is the major consumer of diesel and petrol and responsible for substantial polluting emissions. Primarily, then, we must electrify vehicles which travel long distances every day. In personal transport, two-wheelers must be prioritized since India has one of the largest two-wheeler markets in the world.

Personal cars are the focus in developed countries because these are the principal means of transport. Tesla, with its high-end luxury cars, is the complete antithesis of what the Indian model should be. In India, remedies in personal transport lie elsewhere, including making the shift towards public transportation and shared transport easier. The attempt to subsidize a few cars, whether personal or government, with inadequate charging infrastructure will lead to wasteful expenditure and not reduce oil consumption and emissions.

If we opt for the charging model, traffic congestion will worsen, with lengthy queues. The battery swapping model, however, would involve no waiting time. Stations could be at bus depots or at select petrol pumps. It will take 2-3 minutes to swap, similar to the time taken to fill up and pay for petrol. This would control congestion at these points. Swapping stations would supply fully

charged new batteries, allowing users to get higher range. Their storage conditions will also help enhance battery life.

There have been some concerns about previous experiences in China and Israel. But these models were meant for personal cars and were costly. Besides, lack of marketing, proper execution and mismanagement led to the failure of the promising EV start-up in Israel Better Place. The subsidy structure also became distorted, favouring large batteries.

How should we subsidize EVs? Currently, the subsidy structure for a car does not incentivise the purchase of an electric car as the capital cost is much higher. The same applies to a bus. Both models should get equivalence in subsidy support. A small group should immediately study this issue. Efficiency in terms of total cost per kilometre, not capital costs or larger batteries, should be incentivised.

Ideally, the best course would be to select five smart cities with the objective of fully electrifying their public transportation as well as 50% of their two-wheelers by 2025. This means just EVs should be registered there two years from now.

Each year, five more cities should be added. Both charging and swapping models should be given space. Within five years, we will have sufficient experience to plan a further accelerated transition, including perhaps daytime charging by solar, which could prove more suitable for swapping. An expert group should lay the groundwork for these plans.

We must take small steps to make the big leap. Shenzhen in China is adopting EVs in phases. From 1 July, all ride-hailing vehicles should be EVs, and, by 31 December, all the remaining taxis should be replaced by EVs.

Meanwhile, policies have to be developed to facilitate the indigenization of battery assembly, and manufacture of EVs and their basic components. We should not replace oil imports with battery imports. This is applicable to both EVs and solar energy. A road map should be drawn up. Currently, there are distortions with the goods and services tax (GST). The GST rate on batteries is 28%, while it is 12% for electric vehicles.

If we address all these issues, we can gradually acquire enough experience to develop a manufacturing ecosystem for electric mobility. Moving forward on the path to electrifying mobility is a complex issue and requires all stakeholders to work together. When we planned the solar mission, we had intensive consultations. The roll-out was smooth. EVs require a similar effort. I hope NITI Aayog will take the lead and make the transition to electric mobility smoother and faster.

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